

WHAT IS CLAIMED IS:

1. A method for service flow mobility, comprising:
queuing traffic for a mobile device in one of a
plurality of class of service queues for the mobile
5 device;
altering an association of the class of service
queues for the mobile device from a first sector to a
second sector in response to at least a sector change for
the mobile device; and
10 holding post-sector-change packets for the mobile
device until pre-sector-change packets have been emptied
from the class of service queues.
2. The method of Claim 1, further comprising
15 reformatting the class of service queues by altering the
type of class of service queues for the mobile device
based on admission criteria of the second sector.
3. The method of Claim 2, wherein the admission
20 criteria comprises classes of service available in the
second sector.
4. The method of Claim 2, further comprising after
reformatting the class of service queues, placing the
25 held traffic in the class of service queues.

00005093 062001
1062891.0553

5. The method of Claim 1, wherein altering the association comprises altering an object link.

6. The method of Claim 1, wherein the post-sector
5 change packets are identified by a label.

7. The method of Claim 1, wherein the sector change comprises a primary sector change.

10 8. The method of Claim 7, further comprising scheduling traffic out of the class of service queues for delivery to the mobile device through a corresponding class of service of the primary sector for the mobile device.

15 9. The method of Claim 1, wherein the pre-sector-change packets comprise packets that have already been queued at the time of the sector change.

20 10. The method of Claim 1, wherein packet labels are used to identify pre-sector-change packets and post-sector-change packets.

25 11. The method of Claim 1, further comprising in response to at least a further section change, prior to emptying the pre-sector change packets for the class of service queues, holding further post-sector change packets for the mobile device until the pre-sector change and the post-sector change packets have been emptied from
30 the class of service queues.

12. A system for service flow mobility, comprising:
means for queuing traffic for a mobile device in one
of a plurality of class of service queues for the mobile
device;

5 means for altering an association of the class of
service queues for the mobile device from a first sector
to a second sector in response to at least a sector
change for the mobile device; and

10 means for holding post-sector-change packets for the
mobile device until pre-sector-change packets have been
emptied from the class of service queues.

13. The system of Claim 12, further comprising
means for after emptying the class of service queues
15 reformatting the class of service queues by altering the
type of class of service queues for the mobile device
based on admission criteria of the second sector.

14. The system of Claim 13, wherein the admission
20 criteria comprises classes of service available in the
second sector.

15. The system of Claim 13, further comprising
means for after reformatting the class of service queues,
25 placing the held traffic in the class of service queues.

16. The system of Claim 12, wherein altering the
association is by altering an object link.

30 17. The system of Claim 12, wherein the destination
of the packets is identified using labels.

18. The system of Claim 12, wherein the sector change comprises a primary sector change.

19. The system of Claim 18, further comprising
5 means for scheduling traffic out of the class of service
queues for delivery to the mobile device through a
corresponding class of service of the primary sector for
the mobile device.

10 20. The system of Claim 12, wherein the pre-sector-
change packets comprise packets that have already been
queued at the time of the sector change.

21. The system of Claim 12, wherein labels are used
15 to identify pre-sector-change packets and post-sector-
change packets.

22. The system of Claim 12, further comprising means to, in response to at least a further section 20 change, prior to emptying the pre-sector change packets for the class of service queues, holding further post-sector change packets for the mobile device until the pre-sector change and the post-sector change packets have been emptied from the class of service queues.

23. A system for service flow mobility comprising logic encoded in media, the logic operable to:

queue traffic for a mobile device in one of a plurality of class of service queues for the mobile device;

alter an association of the class of service queues for the mobile device from a first sector to a second sector in response to at least a sector change for the mobile device; and

hold post-sector-change packets for the mobile device until pre-sector-change packets have been emptied from the class of service queues.

24. The system of Claim 23, further comprising logic operable to, after emptying the class of service queues, reformat the class of service queues by altering the type of class of service queues for the mobile device based on admission criteria of the second sector.

25. The system of Claim 24, wherein the admission criteria comprises classes of service available in the second sector.

26. The system of Claim 24, further comprising after reformatting the class of service queues, logic operable to place the held traffic in the class of service queues.

27. The system of Claim 23, wherein the logic operable to alter the association does so by altering an object link.

28. The system of Claim 23, wherein the destination of the packets is identified using labels.

29. The system of Claim 23, wherein the sector
5 change comprises a primary sector change.

30. The system of Claim 29, further comprising scheduling traffic out of the class of service queues for delivery to the mobile device through a corresponding class of service of the primary sector for the mobile device.

31. The system of Claim 23, wherein the pre-sector-
change packets comprise packets that have already been
15 queued at the time of the sector change.

32. The system of Claim 23, wherein labels are used to identify pre-sector-change packets and post-sector-change packets.

33. The system of Claim 23, further comprising means to, in response to at least a further sector change, prior to emptying the pre-sector change packets for the class of service queues, holding further post-sector change packets for the mobile device until the pre-sector change and the post-sector change packets have been emptied from the class of service queues.

34. A method for service flow mobility that maintains packet order comprising:

receiving at a gateway sending data to a mobile device a sector change notification indicating that a
5 primary sector of the mobile device has changed from a first sector to a second sector;

generating labels for incoming data packets destined for the mobile device received after the sector change notification, the label associated with the second
10 sector;

applying the labels to the incoming data packets;

buffering the incoming data packets in a buffer list;

deleting object links corresponding to the mobile
15 device from a first sector-specific object list in the gateway, wherein the first sector-specific object list corresponds to the first sector;

creating object links corresponding to the mobile device in a second sector-specific object list in the
20 gateway, wherein the second sector-specific object list corresponds to the second primary sector; and

queuing data packets from the buffer list when the existing queue of data packets destined for the mobile device have been transmitted.

25

35. The method of Claim 34, wherein the flow of the data packets is divided into a plurality of microflows.

36. The method of Claim 35, wherein the microflows
30 correspond to classes of service.

062891.0553

37. The method of Claim 34, wherein data packets are queued according to class of service.

38. The method of Claim 37, wherein the existing
5 queue of data packets corresponds to the classes of
service available in the first sector.

39. The method of Claim 37, wherein the queuing of
data packets from the buffer list corresponds to the
10 classes of service available in the second sector.

40. The system of Claim 34, further comprising means to, in response to at least a further section change, prior to emptying the pre-sector change packets
15 for the class of service queues, holding further post-sector change packets for the mobile device until the pre-sector change and the post-sector change packets have been emptied from the class of service queues.

41. A system for service flow mobility that maintains packet order comprising:

means for receiving at a gateway sending data to a mobile device a notification that the primary sector of

5 the mobile device has changed;

means for deleting object links corresponding to the mobile device from a sector-specific object list in the gateway, wherein the sector-specific object list corresponds to the old primary sector;

10 means for creating object links corresponding to the mobile device in another sector-specific object list in the gateway, wherein the other sector-specific object list corresponds to the new primary sector;

means for changing the labels of incoming data
15 packets destined for the mobile device;

means for buffering the incoming data packets in a buffer list;

means for queuing and transmitting data packets from the buffer list when the existing queue of data packets
20 destined for the mobile device have been transmitted.

42. The system of Claim 41, wherein the flow of the data packets is divided into a plurality of microflows.

25 43. The system of Claim 42, wherein the microflows correspond to classes of service.

44. The system of Claim 41, wherein data packets are queued according to class of service.

45. The system of Claim 44, wherein the existing queue of data packets corresponds to the classes of service available in the old sector.

5 46. The system of Claim 44, wherein the queuing of data packets from the buffer list corresponds to the classes of service available in the new sector.

10 47. The system of Claim 41, further comprising means to, in response to at least a further section change, prior to emptying the pre-sector change packets for the class of service queues, holding further post-sector change packets for the mobile device until the pre-sector change and the post-sector change packets have
15 been emptied from the class of service queues.